IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application Serial No. ..... Filed Herewith
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Inventor ..... David K. Ovard et al.
Assignee ..... Micron Technology, Inc.
Group Art Unit ..... Unknown
Examiner ..... Unknown
Attorney's Docket No. MI40-336
Title: "Modulators, Transmitters, a Radio Frequency Identification Device System And Carrier Signal Suppression Methods"

PRELIMINARY AMENDMENT EL 844048953

To: Box Patent Application
Assistant Commissioner for Patents
Washington, D.C. 20231

From: James D. Shaurette (Tel. 509-624-4276; Fax 509-838-3424)
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Sir:

Please enter the following amendments prior to examining the above identified application:

AMENDMENTS

In the Title

Please replace the title with the following:

--MODULATORS, TRANSMITTERS, A RADIO FREQUENCY IDENTIFICATION DEVICE SYSTEM AND CARRIER SIGNAL SUPPRESSION METHODS--

In the Specification

At page 1 before the "Technical Field" section please insert:

--RELATED PATENT DATA

The present application is a continuation of U. S. Patent Application Serial No. 09/066,610, filed on April 24, 1998, entitled Backscatter Interrogators, Communication Systems and Backscatter Communication Methods, naming David K. Ovard and Roy Greeff as inventors, the disclosure of which is incorporated herein by reference.--

In the Claims

Please replace the claims with the following clean version of the entire set of pending claims, in accordance with 37 C.F.R. § 1.121(c)(1)(i).

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48. (New) A modulator comprising:

circuitry configured to receive a data signal, to provide the data signal comprising a plurality of chips, to invert at least some of the chips, and to modulate a carrier signal using the data signal after the inversion of at least some chips and prior to communication of the carrier signal.

49. (New) The modulator of claim 48 wherein the circuitry is further configured to provide the data signal having three states after the inversion and prior to the modulation.

50. (New) The modulator of claim 48 further comprising a filter coupled with the circuitry and configured to band filter the data signal prior to the modulation of the carrier signal.

51. ((New) The modulator of claim 48 wherein the circuitry is configured to phase modulate the carrier signal responsive to the inversion.

52. (New) The modulator of claim 48 wherein the circuitry is configured to invert at least some of the chips responsive to the data signal comprising a predetermined value.

53. (New) A transmitter comprising:

circuitry configured to receive a data signal and to spread the data signal providing a spread data signal; and

a mixer coupled with the circuitry, and wherein the mixer is configured to receive the spread data signal and to amplitude modulate and to phase modulate a carrier signal using the spread data signal prior to communication of the carrier signal using the transmitter.

54. (New) The transmitter of claim 53 further comprising a filter coupled with the circuitry and the mixer, and wherein the filter is configured to band filter the spread data signal prior to application of the spread data signal to the mixer.

55. (New) The transmitter of claim 53 wherein the circuitry is configured to spread the data signal using direct sequence spread spectrum spreading.

56. (New) A modulator comprising:

circuitry configured to modulate a carrier signal using a data signal, the modulator being further configured to spread the data signal providing a spread data signal and to invert portions of the spread data signal prior to modulating the carrier signal.

57. (New) The modulator of claim 56 wherein the circuitry is configured to phase modulate the carrier signal responsive to the inversion of portions of the spread data signal.

58. (New) The modulator of claim 56 wherein the circuitry is configured to invert the spread data signal responsive to the spread data signal comprising a predetermined value.

59. (New) The modulator of claim 56 further comprising a filter configured to band filter the spread data signal prior to the modulation of the carrier signal.

60. (New) A modulator comprising:

circuitry configured to spread a data signal providing a spread data signal having two different states, to invert portions of the spread data signal to provide the spread data signal having three different states, and to modulate the carrier signal using the spread data signal having the three different states.

61. (New) The modulator of claim 60 wherein the circuitry is configured to amplitude modulate and to phase modulate the carrier signal using the spread data signal having the three different states.

62. (New) The modulator of claim 60 wherein the circuitry is configured to phase modulate the carrier signal responsive to the inversion of portions of the spread data signal.

63. (New) The modulator of claim 60 wherein the circuitry is configured to invert portions of the spread data signal responsive to the spread data signal comprising a predetermined value.

64. (New) The modulator of claim 60 further comprising a filter configured to band filter the spread data signal prior to the modulation of the carrier signal.

65. (New) A radio frequency identification device communication system comprising:

an interrogator configured to externally communicate data of a data signal using a carrier signal having a frequency and to modify the data signal prior to the external communication of the data to suppress the power of the external communication of the data at the frequency of the carrier signal; and

a radio frequency identification device configured to receive the data and to process the data.

66. (New) A carrier signal suppression method comprising:

providing a data signal;

first modifying the data signal using a first code signal;

second modifying the data signal using a second code signal different than the first code signal after the first modifying;

modulating a carrier signal using the data signal after the first modifying and the second modifying; and

communicating the carrier signal after the modulating.

67. (New) The method of claim 66 further comprising band filtering the data signal prior to the modulating.

68. (New) The method of claim 66 wherein the first and second modifyings comprise modifyings using respective ones of the first code signal and the second code signal comprising different pseudo-noise sequences.

69. (New) A carrier signal suppression method comprising:

providing a digital data signal;

converting the digital data signal to a data signal having three different states;

providing a carrier signal; and

modulating the carrier signal using the data signal having three different states.

70. (New) The method of claim 69 further comprising spreading the digital data signal before the converting.

71. (New) The method of claim 69 further comprising band filtering the data signal prior to the modulating.

72. (New) A carrier signal suppression method comprising:

providing a data signal;

spreading the data signal, wherein the spreading comprises direct sequence spread spectrum spreading;

inverting portions of the data signal after the spreading;

modulating a carrier signal using the data signal after the inverting; and

communicating the carrier signal after the modulating.

73. (New) The method of claim 72 wherein the modulating comprises amplitude modulating and phase modulating.

74. (New) The method of claim 72 wherein the modulating comprises phase modulating the carrier signal responsive to the inverting.

75. (New) The method of claim 72 further comprising band filtering the data signal after the spreading and prior to the modulating.

76. (New) The method of claim 72 wherein the inverting comprises inverting responsive to the data signal comprising a predetermined digital value.

77. (New) A carrier signal suppression method comprising:

spreading a data signal comprising data to be communicated and providing a spread data signal; and

communicating the data externally of a transmitter using a carrier signal after the spreading, the communicating comprising amplitude modulating and phase modulating the carrier signal using the spread data signal.

78. (New) The method of claim 77 further comprising band limiting the spread data signal prior to the amplitude modulating and the phase modulating.

79. (New) The method of claim 77 further comprising inverting at least portions of the spread data signal after the spreading to implement the phase modulating.

80. (New) The method of claim 79 wherein the inverting comprises inverting responsive to the spread data signal comprising a predetermined digital value.

REMARKS

This application is a continuation application of U.S. Patent Application Serial No. 09/066,610. Claims 1-47 have been canceled without prejudice.

The Examiner is requested to phone the undersigned if the Examiner believes such would facilitate prosecution of the present application. The undersigned is available for telephone consultation at any time during normal business hours (Pacific Time Zone).

Respectfully submitted,

Dated: 9/20/01

By: _____

James D. Shaurette
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